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optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and

an optical element for causing the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element comprising a single lens, the curvatures of opposite lens surfaces of the single lens in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.

*F1
Antel*

³²₄₄ ³³₄₅. A scanning optical apparatus according to Claim ³²₄₄, wherein when the maximum value and minimum value of an F number of the beam of light incident on the surface to be scanned in the sub-scanning direction are F_{max} and F_{min} , respectively, the curvatures of the opposite lens surfaces of the single lens in the sub-scanning direction are continuously varied from the on-axis toward the off-axis so as to satisfy the condition that $F_{min}/F_{max} \geq 0.9$.

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46. A scanning optical apparatus according to
Claim ³²44, wherein the sign of the curvature of at least one
of the opposite lens surfaces of the single lens in the sub-
scanning direction is reversed from the on-axis toward the
off-axis.

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47. A scanning optical apparatus according to
Claim ³²44, wherein the curvatures of the opposite lens
surfaces of the single lens in the sub-scanning direction are
varied asymmetrically with respect to the optical axis from
the on-axis toward the off-axis.

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48. A scanning optical apparatus according to
Claim ³²44, wherein said optical element is made by plastic
molding.

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49. A scanning optical apparatus according to
Claim ³²44, wherein said optical element is made by glass
molding.

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50. A scanning optical apparatus according to
Claim ³²44, wherein the single lens has a lens surface
comprising an aspherical surface in the main scanning
direction.

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51. A scanning optical apparatus according to Claim 33, wherein the single lens has a lens surface having an inflection point in the main scanning direction.

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52. A scanning optical apparatus comprising:
light source means having a plurality of light source units capable of being independently modulated;
a deflecting element for deflecting a plurality of independently modulated beams of light emitted from said light source means;

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optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and

an optical element for causing the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element being comprised of at least two lenses, the curvatures of at least two lens surfaces of the two lenses in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.

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40 53. A scanning optical apparatus according to Claim 52, wherein when the maximum value and minimum value of an F number of the beam of light incident on the surface to

be scanned in the sub-scanning direction are F_{max} and F_{min} , respectively, the curvatures of the at least two lens surfaces of the two lenses constituting said optical element in the sub-scanning direction are continuously varied from the on-axis toward the off-axis so as to satisfy the condition that $F_{min}/F_{max} \geq 0.9$.

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40 54. A scanning optical apparatus according to Claim 52, wherein the sign of the curvature of the at least one lens surface of the two lenses in the sub-scanning direction is reversed from the on-axis toward the off-axis.

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40 55. A scanning optical apparatus according to Claim 52, wherein the curvatures of the at least two lens surfaces of the two lenses in the sub-scanning direction are varied asymmetrically with respect to the optical axis from the on-axis toward the off-axis.

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40 56. A scanning optical apparatus according to Claim 52, wherein at least one of the two lenses constituting said optical element is made by plastic molding.

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40 57. A scanning optical apparatus according to Claim 52, wherein at least one of the two lenses constituting said optical element is made by glass molding.

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40 58. A scanning optical apparatus according to Claim 52, wherein the at least two lens surfaces of the at least two lenses have aspherical surfaces in the main scanning direction.

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59. A scanning optical apparatus comprising:
light source means having a plurality of light source units capable of being independently modulated;
a deflecting element for deflecting a plurality of independently modulated beams of light emitted from said light source means;
optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and
an optical element for guiding the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element being comprised of a plurality of lens surfaces, the curvatures of at least two lens surfaces of the plurality of lens surfaces in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.

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